

Please replace the existing ABSTRACT section with the following redlined ABSTRACT:

~~The present invention provides a~~ multicylinder homogeneous charge; compression ignition (HCCI) type engine, also known as a premixed charge compression ignition (PCCI) engine, with a control system designed to maintain stable, ~~efficient, low emission~~ HCCI combustion during engine speed/load transitions ~~from one speed/load operating point to another speed/load operating point.~~

~~— HCCI combustion control in the invention is obtained by adjusting specified “engine by: (1)~~ determining “combustion parameter” values such as the maximum rate of pressure rise for each cycle of each cylinder, (2) adjusting engine operating parameters~~” that influence the crank angle location of the combustion event (viz., (such as~~ charge-air intake temperature, intake pressure (boost), or charge-air oxygen concentration, ~~engine cooling, and engine compression ratio), in coordination with adjustments in fuel quantity, by the following preferred method: (1) determining an existing “combustion parameter” value such as the maximum rate of pressure rise (MRPR), for each cycle of each cylinder, (2) adjusting an engine operating parameter of the engine)~~ to effect a change in ~~said~~the combustion parameter value, (3) thereafter adjusting an engine “control parameter” (e.g., commanded fuel quantity) to each cylinder; ~~responsive to the effect of the adjusted engine operating condition,~~ to maintain a desired target for the combustion parameter value, and (4) individually adjusting cooling, heating and/or fuel command to individual “outlier” (deviating) cylinders; to achieve uniform combustion. ~~— Preferred control strategies to maximize HCCI combustion stability are also set forth,~~ Additional strategies such as averaging ~~sensed~~of combustion parameter values ~~and/or ignoring combustion parameter values within a specified dead band region so as to ignore cycle-to-cycle random variations of the combustion parameter values at stable HCCI operating points. Additional methods to minimize such engine combustion variability include increasing intake pressure (boost) and controlling combustion chamber cooling, and are additionally described.~~ and use of deadband regions in the control of HCCI combustion are also set forth.

The following is the full text of the replacement ABSTRACT again, without redlining:

A multicylinder homogeneous charge compression ignition (HCCI) engine with a control system designed to maintain stable HCCI combustion during engine speed/load transitions by: (1) determining "combustion parameter" values such as the maximum rate of pressure rise for each cycle of each cylinder, (2) adjusting engine operating parameters (such as charge-air intake temperature, intake pressure (boost), or charge-air oxygen concentration) to effect a change in the combustion parameter value, (3) thereafter adjusting an engine "control parameter" (e.g., commanded fuel quantity) to each cylinder to maintain a desired target for the combustion parameter value, and (4) individually adjusting cooling, heating and/or fuel command to deviating cylinders to achieve uniform combustion. Additional strategies such as averaging of combustion parameter values and use of deadband regions in the control of HCCI combustion are also set forth.